AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A real-time monitoring apparatus for biochemical reaction, which comprises:

a temperature control block comprising a thermoelectric element (2) capable of supplying heat into reaction tubes and a heat transmission block (3) which transmit the heat to the reaction tubes;

a light irradiation source comprising a lamp (5) which irradiates light with uniform intensity to sample contained in the reaction tube, and the optical waveguide (8) which has a facet shape to be fitted with that of a reaction tube plate (34); and

an optical system comprising receiving part for receiving fluorescence irradiated from the sample by the light emitted from the light irradiation source.

2. (original) The real-time monitoring apparatus according to claim 1, wherein the lamp (5) includes a first ellipsoidal reflecting mirror.

3. (original) The real-time monitoring apparatus according to claim 1, wherein the refractive index of medium of the optical waveguide is 1.35.about.2.0.

4. (original) The real-time monitoring apparatus according to claim 1, wherein the optical waveguide has a rectangular shape.

5. (original) The real-time monitoring apparatus according to claim 1, wherein the optical waveguide has a round shape.

6. (currently amended) A real-time monitoring apparatus for biochemical reaction, which comprises:

a temperature control block comprising a thermoelectric element (2) capable of supplying heat into a reaction tube and a heat transmission block (3) which transmit the heat to the reaction tubes containing sample;

a light irradiation source comprising a lamp (41) which irradiates the light with uniform intensity to sample contained in the reaction tube, a condensing lens [[3(36)]] (36) and an optical waveguide (8) which has a facet shape to be fitted with that of a reaction tube plate (34); and

[[3)]] an optical system comprising a receiving part for receiving fluorescence irradiated from the sample by the light emitted from the light irradiation source.

7. (original) The real-time monitoring apparatus according to claim 6, wherein the lamp (41) includes a parabolic mirror.

8. (original) The real-time monitoring apparatus according to claim 6, wherein the refractive index of medium of the optical waveguide (8) is 1.35.about.2.0.

9. (original) The real-time monitoring apparatus according to claim 6, wherein the optical waveguide (8) has rectangular shape.

10. (original) The real-time monitoring apparatus according to claim 6, wherein the optical waveguide has round shape.

11. (currently amended) A real-time monitoring apparatus for biochemical reaction, which comprises:

a temperature control block comprising a thermoelectric element (2) capable of supplying heat into reaction tube, and a heat transmission block (3) which transmit the heat to the reaction tubes containing sample;

a light irradiation source comprising a lamp (5) which irradiates light with uniform intensity to sample contained in the reaction tube and the optical waveguide (8) which has a facet shape to be fitted with that of a reaction tube plate (34); and

an optical system comprising a light receiving part for receiving fluorescence generated by the light irradiated from the light source and a second reflecting mirror (11) which alters light path.

12. (original) The real-time monitoring apparatus according to claim 11, which comprises two or more the second reflecting in mirror (11) which alters light path

13. (original) The real-time monitoring apparatus according to claim 11, wherein the lamp (5) comprises an ellipsoidal mirror.

14. (original) The real-time monitoring apparatus according to claim 11, wherein the refractive index of medium of the optical waveguide (8) is 1.35.about.2.0.

15. (original) The real-time monitoring apparatus according to claim 11, wherein the optical waveguide (8) has rectangular shape.

16. (currently amended) The real-time monitoring apparatus according to claim 11 ~~claim 6~~, wherein the optical waveguide has round shape.